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two or more vector generating processes each of which generates a movement vector indicative of movement of a pixel block from one frame to another, the vector generating processes having different search ranges and accuracies; and

a selecting process for selecting, based on image characteristics of the pixel block, one of the movement vectors generated by the vector generating processes for use in a movement compensating process of the image encoding system.

REMARKS

Reconsideration and allowance of the subject patent application are respectfully requested.

Applicant's representative wishes to thank Examiner Wong for the courtesy extended during the discussion of the final office action on April 8, 2003.

Applicant acknowledges with appreciation the indication that claims 5 and 12 are allowed. No further comments will be made with respect to these claims.

Claim 20 has been amended to correct what will be readily recognized as minor informality. This amendment is not made for reasons related to patentability. Because the amendment merely corrects an informality, entry of the amendment is believed to be appropriate and is respectfully requested.

Claims 1-4, 6-11, and 13-24 were rejected under 35 U.S.C. Section 102(b) as allegedly being anticipated by Kondo (U.S. Patent No. 5,576,772). Applicant traverses this rejection.

Kondo discloses a method and apparatus for detecting a motion vector between a block in an image and a corresponding block in another image. As noted during the aforementioned discussion with Examiner Wong, in Kondo, motion vectors are obtained respectively in a first hierarchical stage, a second hierarchical stage and a third hierarchical stage (*see* Figures 9A-9C). The motion vector of the third hierarchical stage is outputted from determining circuit 18 (*see* col. 12, lines 43-51 and Figure 11B); the motion vector of the second hierarchical stage is outputted from determining circuit 19 (*see* col. 13, lines 4-10 and Figure 11B); and the motion vector of the first hierarchical stage is outputted from determining circuit 20 (*see* col. 13, lines 21-22 and Figure 11B).

The motion vector of the third hierarchical stage is doubled by a multiplier 22 and added to the motion vector of the second hierarchical stage by an adder 23. This summed motion

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vector is doubled by a multiplier 25 and added to the motion vector of the first hierarchical stage by an adder 26. Finally, the resultant motion vector is outputted from the terminal 27 (see Figure 11B). Thus, the motion vectors of all the hierarchical stages are used to obtain the resultant motion vector.

As further noted during the aforementioned discussion, Kondo does not disclose a selecting device for selecting one of the movement vectors generated by a plurality of generating devices as called for in independent claims 1 and 7; or a selecting device for selecting one of the movement vectors generated by two or more vector generators as called for in independent claim 15; or a selecting process of selecting one of the movement vectors generated by a plurality of generating processes as called for in independent claims 8 and 14; or a selecting process for selecting one the movement vectors generated by two or more vector generating processes as called for in independent claim 20. As noted above, in Kondo, the motion vectors of all the hierarchical stages are combined to obtain a resultant motion vector -- there is no device or process for selecting one of a plurality of movement vectors. For at least these reasons, Kondo cannot possibly anticipate claims 1, 7, 8, 14, 15, 20 and the claims that depend therefrom.

The final office action alleges that elements 12a-12e are considered to be the plural generating devices where each generating device generates a movement or motion vector. There is no basis or support in Kondo for this allegation. Elements 12a-12e are differential value detection circuits for detecting differential values between the inputs thereto. *See, e.g.*, col. 12, ll. 16-18 ("Differential value detecting circuit 12a obtains the differential value between the output signals of the constant component extracting circuits 7a and 7b..."). Kondo describes determining circuits 18-20 -- not circuits 12a-12e -- as producing motion vectors. *See, e.g.*, col. 12, ll. 47-51 ("The determining circuit 18 also produces the third hierarchical stage motion vector between the base block of the present frame and the best matching block in the third hierarchical search range of the reference frame."). *See also* col. 13, ll. 4-5 and col. 13, ll. 21-22.

The office action further alleges that circuits 18-20 are a selecting device for selecting movement vectors generated by the circuits 12a-12e. Here again, there is no basis or support in Kondo for this allegation. As noted above, determining circuits 18-20 produce motion vectors, and do not select from among previously generated motion vectors. Neither the text of Kondo nor the figures thereof ascribe or imply any selection function to circuits 18-20.

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Finally, Kondo does not "select" the final, best resultant motion vector at element 27 as implied in the office action. Node 27 outputs the result of combining the three outputs of the elements 18-20. There is no selecting function ascribed or implied in Kondo in connection with this output.

For at least these reasons, all pending claims are believed to be allowable and early notification to that effect is respectfully requested.

Respectfully submitted,

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Version marked to show changes made

IN THE CLAIMS

Claim 20 has been amended as follows:

20. (Amended) A movement vector generating process for an image encoding system, comprising:

two or more vector generating processes each of which generates a movement vector indicative of movement of a pixel block from one frame to another, the vector generating processes having different search ranges and accuracies; and

a selecting process for selecting, based on image characteristics of the pixel block, one of the movement vectors generated by the vector generating processes [generators] for use in a movement compensating process of the image encoding system.